MEDLOCK & ASSOCIATES ENGINEERING, PA

Mike Sobol, Mayor
Town of Black Mountain
209 Morningside Dr.
Black Mountain, NC 28711

July 16, 2025

Subject: Structural Engineering Report – Floor Framing Repairs
401 Laurel Circle Dr. Black Mountain, North Carolina
Project Number: 956425

Dear Mr. Sobol:

At your request, Medlock & Associates Engineering (MAE) representatives conducted a site visit to the Black Mountain Center for Active Aging, located at 401 Laurel Circle Drive on July 8, 2025, to evaluate existing fire-damaged framing elements discovered after repairs from tropical storm Helene. We understand that MAE's work is intended to assess the extent of damage and assist you in developing a general scope of repair.

Our evaluation is based on a limited visual assessment; no invasive observations or testing were completed for the preparation of this report. The scope of this report is limited to the structural modifications of the affected floor framing members. Based on our site observations, limited analysis, and prior experience with similar situations, we have developed the following comments and recommendations.

1. **Design Criteria:**
   a. Roof Dead Load = 10 PSF
   b. Roof Live Load = 20 PSF
   c. Floor Dead Load = 15 PSF
   d. Floor Live Load = 100 PSF – assembly
   e. Wind Speed (ultimate) = 115 PSF

2. The existing floor system generally comprises 2x10 floor joists spaced at 16 inches on center spanning approximately between existing steel or built-up wood beams. The beams are supported by steel pipe columns. MAE observed 2 areas that require structural framing alteration/addition in order to comply with current building code. We recommend repair/replacement of the following elements. All dimensional lumber shall be #2 Southern Yellow Pine, unless otherwise noted.
3. The first area of repair is located toward the front center of the building, where a previous opening for a stairwell may have been located and was later infilled in with framing. In this area we recommend removing the existing central (2) 2x10 flush girder which spans left-right and supports infilled 2x10 floor joists that span approximately 4.5 feet. We recommend providing new full-span 2x10 floor joists which will span approximately 9 feet between the existing dropped beams. The new joists may be sistered to the partial remaining joist sections- attach the sistered joists with (3) 10d nails spaced at 16 inches on center.
4. The second area of repair is located in the central portion of the lower level from the middle of the building toward the rear, where joists span approximately 15 feet between 2 existing steel beams. In this area a full-span 2x10 was previously sistered to the existing fire-damaged 2x10 floor joists. We recommend sistering an additional full-span 2x10 member to the existing floor joists. Attach with (3) 10d nails spaced at 16 inches on center.

Address: 53 Asheland Avenue, Suite 101 • Asheville, NC 28801 **Phone:** (828) 232-4448 • Fax: (828) 232-5224 **Web:** www.medlockengr.com

5. Due to the extent of the damage, partial demolition of existing structural elements will be required. It is the responsibility of the contractor to ensure no foot traffic in areas of the main level floor, and to maintain the stability of the structure during demolition and construction. Contact MAE if guidance for temporary shoring or bracing is needed.
6. It is our opinion that the repaired framing elements described above will be sufficient to support required commercial uniform loading conditions.
7. Ensure that all framing members are installed per code, including minimum bearing requirements, and that no member is notched, bored, or cut without prior approval from the engineer of record.
8. All Simpson connectors and associated fasteners shall be installed per the manufacturer's specifications, including corrosion protection where in contact with PT materials or exposed to the elements.
9. Temporary bracing and shoring may be required, and the contractor shall maintain responsibility for the structural integrity of the residence during construction.
10. During construction verify all framing meets the assumptions within this report; report any issues to the engineer of record for further evaluation. Contact the engineer during demolition and construction if unforeseen conditions are discovered, or to make additional recommendations regarding the framing alterations, if necessary.

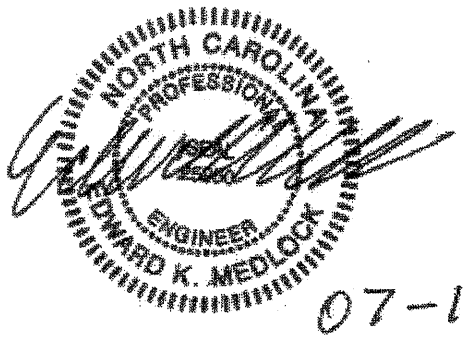
This report shall not supersede the State Code or local building codes as they apply. All construction shall proceed in accordance with the requirements of the current edition of the North Carolina Residential Building Code.

The scope of this report is limited to matters discussed herein. No opinion is offered, and none should be inferred, regarding other aspects of this structure or the structure taken as a whole. This report is based on presently known and available facts, data, and information. To the extent that additional or different facts, data, or information is developed or discovered after the issuance of this report, MAE reserves the right to amend, alter, or change the report as needed to reflect consideration of the additional or different facts, data, or information. Site observations are limited to visibly observable areas; we offer no opinion regarding structural conditions behind finishes or inaccessible areas. If signs of distress are observed or if new information is brought to our attention, invasive testing for further observations may be recommended.

We are pleased to be of service. If you have any questions regarding this report or require further assistance, please call.

Sincerely,

Medlock & Associates Engineering, P.A., (Cert. #C3133):



07-16-

Christopher T. Dickson
Project Manager

Edward K. Medlock, PE
Senior Engineer, President

Ruggles Engineering PC

November 6, 2024

Belfor Property Restoration
4800-F Sirus Lane
Charlotte, NC 27208

Attention: Mr. Joey Chestnut

Re: Lakeview Center - Flood Damage
101 Laurel Circle Drive
Black Mountain, NC 28711

Dear Joey,

Ruggles Engineering PC has completed a structural evaluation of the Lakeview Center. The lower level of the building that was used for office space was flooded during hurricane Helene and had approximately four feet of water in it above the lower floor elevation. The main level of the building is used as an assembly occupancy for group functions.

Building Description:

The building is a two story wood framed structure that is constructed with load bearing masonry foundation walls and load bearing exterior wood framed walls. The roof is framed with a combination of site built wood trusses and conventional wood framing that support an asphalt shingled roof . The main level floor is framed with 2x10 wood floor joists spaced at sixteen inches on center. The wood floor joists are supported on steel beams and columns that appear to have been added at a later date than the original construction to allow the lower level to be enclosed for use as office space.

Observations and Recommendations:

1. The water damaged the finishes on the walls of the lower level offices. The interior finishes and wall insulation have been removed exposing the wall and main level floor framing. Dehumidifiers were running in the space to dry out the framing.
2. The majority of the wall framing is in serviceable condition and can remain. There are however three areas where extensive termite damage was observed that will require repairs. One area is at the front left corner of the building, the second is near the lower stair landing and the third is on the right side wall. The damage sills should be replaced with pressure treated wood. Wall sheathing should be replaced with 1x6 dimensional lumber or 23/32" o.s.b. to match the thickness of the existing wall sheathing. The damaged areas of sheathing should have house wrap installed and new wood lap siding to match the existing.
3. The removal of the gypsum board on the ceiling of the lower level revealed that there had been a fire sometime in the past. Portions of the floor framing had been replaced or repaired by sistering new members to the fire damage framing. The exposed framing will need to meet current code standards which will require the main level floor to be designed for a one hundred pound per square foot assembly live load. The wood floor framing was checked for code compliance utilizing the allowable stress for the wood framing that were in effect at the time of the construction. The spans of the 2x10 floor joist are typically in the nine to ten foot range and have adequate capacity to support the floor loading. There is however, a section of floor that has spans of approximately

fourteen foot ten inches and will require reinforcement. The joists should have an additional 2x10 (#1 SYP) sistered to the side of each existing joist. In some instances, there will be two joists plus a third fire damaged member. The members shall be connected with two rows of 16d nails spaced at twelve inches on center.

4. There is an eight foot wide section of main level floor framing that is located toward the front center of the building where there was likely a floor opening that was filled in. The floor framing in this area should be reframed with 2x10 floor joists at sixteen inches on center. There is a two ply 2x10 near the center of the joist span that should be removed so that new joist can be installed to span beam to beam. The existing joists that span perpendicular to the beams should remain in place because the floor sheathing is nailed to them. The new joists should be sistered beside the existing members.
5. The lower level walls that have been opened up will need to be insulated to meet current energy code requirements. One option would be to install R20 faced batt insulation in the walls. Due to the thickness require for the insulation, the walls would need to be furred out for this option. A second option would be to use spray foam insulation that could be installed in the current 2x4 stud framing.
6. The lower level electrical wiring will need to be replaced.
7. There was some water damage to the main level lay-in ceiling near the front entrance doors. The source of the leak appears to be blown rain through the gable end attic vent. No long term leaking of water damage was observed in the roof framing.
8. The building with the above recommended repairs will meet the load requirements of the 2018 North Carolina State Building Code.

Ruggles Engineering PC appreciates the opportunity to assist you with your project. If you have any questions, please feel free to call me.

Sincerely,

Randy M. Ruggles, P.E.

11/6/24

NORTH CAROLINA PROFESSIONAL SEAL 026313 ENGINEER RANDY M. RUGGLES

(cdickson@medlockengr.com)

1116 Whispering Winds Drive, Catawba, NC 28609
- Telephone: 704-778-5192
- Facsimile: 828-478-9119
- Email: rugglesengineering@embarqmail.com
- Firm Number: C-2817

EWING
CONSTRUCTION

Mike Sobol,

We hereby propose completing the work below at The Lake View Center located at 101 Laurel Circle Drive, Black Mountain Nc. All necessary labor, materials, taxes, and insurance are included in the quote. All work is to be performed to industry standards and will comply with all local and state codes.

Demo and dispose of material properly

Install 2x10 yellow pine floor joists according to Structural engineering report from Medlock & Associates engineering, dated July 16th, 2025

Move and replace any plumbing, gas and electrical as needed

Any areas of rotten wood discovered during construction shall be removed and repaired (owner shall be advised / informed of the estimated repair prior to fixing) on a cost-plus basis. Labor rates are $ 40.00 per man per hour along with the cost of materials needed, a builder's fee of 20% will be added to the invoice.

Total estimate for all work_____ **$ 9,600.00**

Ewing Construction Company ▫ 3161 Old US 70 East ▫ Black Mountain, North Carolina 28711
www.Ewingconstruction.co ▫ Office: 828-669-1133 ▫ Fax: 828-669-4502

GOFORTH BUILDERS
GENERAL CONTRACTORS

To: The Town of Black Mountain 9/4/25

Attn: Mike Sobol

From: Doug Hill

Re: Black Mountain Clubhouse floor repairs

We will make the repairs to the existing floor system. The repairs are limited to sistering a new #1 2x10 yellow pine floor joist to the existing undersized floor joists. Total number of joists to repair is 27 total joists.

This price includes removing the electrical wires as needed to do the work. This price does not include any electrical, plumbing or mechanical repairs.

Building Permit	$100.00
Framing Material	$120.00
Labor	$3,360.00
	$3,580.00
Overhead and Profit	$895.00
	$4,475.00

Wrote by & Said — We need removed & replaced all utilities affected to be included —

Doug Hill
Goforth Builders
828-775-8094

Outlook

Response to RFI: Lakeview Center for Aging

From Little , Dewana <dewana.little@fema.dhs.gov>
Date Mon 8/25/2025 12:08 PM
To Mike Sobol <mike.sobol@tobm.org>
Cc Hoose, Todd <Todd.Hoose@fema.dhs.gov>

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Day Mayor Sobol,

Thank you for contacting me to request information about Lakeview Center for Aging, in reference to repair of pre-existing damages without negatively impacting the PA Project.

Response:
The repair of the floor joist is not included in the FEMA/NCEM PA project for the Lakeview Center for Aging. The repair of the floor joist would not present a duplication of benefits situation.

Dewana Little
Program Analyst, Buncombe County
Mobile: (828) 717-6859
Dewana.Little@fema.dhs.gov | Pronouns: she/her
Federal Emergency Management Agency
fema.gov

FEMA

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